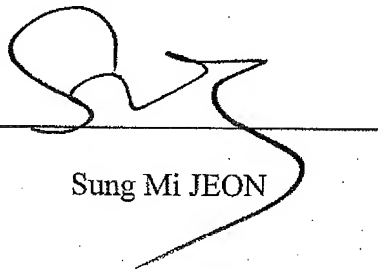# CERTIFICATE OF VERIFICATION

I, Sung Mi JEON of 7th Floor, Hyundae Building, 175-9, Jamsil-dong, Songpa-ku, Seoul, 138-861, Republic of Korea state that the attached documents are a true and complete translation to the best of my knowledge of the Korean-English language and that the writings contained in the following pages are correct English translations of the Korean Patent Application No. 10-2002-0087825

Dated this 23 th day of January, 2009

Signature of translator: _____

Sung Mi JEON

KOREAN INTELLECTUAL
PROPERTY OFFICE

This is to certify that the following application annexed hereto is a true copy from the records of the Korean Industrial Property Office.

Application Number: KR 10-2002-0087825

Date of Application: Dec. 31. 2002

Applicant(s): LG Electronics Inc.

COMMISSIONER

[ABSTRACT OF DISCLOSURE]

[ABSRTACT]

The present invention relates to a mobile communication system, and particularly, to a method and system for setting a packet terminating call in a General Packet Radio Service (GPRS) network. A method of the present invention includes the steps of determining whether to accept a packet terminating call set request for a packet radio service based on the pre-registered packet terminating call filtering information, and setting the terminating call according to a result of determination.

[REPRESENTATIVE DRAWING/ TYPICAL DRAWINGS]

FIG. 2

[INDEX WORDS]

GGSN, SGSN, GPRS, terminating call filtering

[SPECIFICATION]
[TITLE OF THE INVENTION]

Method and system for setting a packet terminating call in a packet radio service network

[BRIEF DESCRIPTION OF THE DRAWINGS]

FIG. 1 is a block diagram illustrating the construction of a general mobile communication system.

FIG. 2 is a block diagram illustrating a structure of GGSN for filtering a terminating call according to an embodiment of the present invention.

FIG. 3 is a flowchart illustrating a packet terminating call control process in the GGSN according to the present invention.

FIG. 4 is a flowchart illustrating a process in a terminating call control section according to the present invention.

FIG. 5 is a block diagram illustrating a construction and procedure for changing the packet terminating call filtering information according to an embodiment of the present invention.

[DETAILED DESCRIPTION OF THE INVENTION]

[OBJECT OF THE INVENTION]

[FIELD OF THE INVENTION AND BACKGOUND OF THE RELATED ART]

The present invention relates to a mobile communication system, and particularly, to a method and system for setting a packet terminating call in a General Packet Radio Service (Hereinafter referred to as GPRS) network.

Generally, a GPRS network represents a wire network of a radio service provider for offering a packet service to subscribers.

FIG. 1 is a block diagram illustrating the construction of a general mobile communication system.

As referred to FIG. 1, a conventional mobile communication system includes: a Gateway GPRS Support Node

(GGSN) 20 performing a function of a gateway for interworking between the GPRS network and the Internet or an external packet network; a serving GPRS support node (SGSN) 23 connected to the GGSN 20 through the GPRS network for managing the mobility of a mobile terminal in a packet mode, and performing a function of a packet switch; a home location register (HLR) 24 connected to the GGSN 20 and the SGSN 23 for managing subscription information and location information of a subscriber; a plurality of mobile terminals 10 receiving a packet radio service; a base station 21 for allowing the mobile terminals 10 to connect with the GPRS network, and managing radio resources; and a base station controller 22 for controlling and managing the base station 21.

When the mobile communication system constructed as mentioned above intends to set a packet terminating call for providing a Packet Data Protocol Protocol Data Unit (PDP PDU) to the mobile terminals 10, a certain mobile terminal does not know information on the PDP PDU related to the packet terminating call set request at all, and thus it should accept a set request for the corresponding packet terminating call in order to receive the PDP PDU. For the first time after the packet terminating call is set, the mobile terminal can receive the PDP PDU from the GGSN, and confirm the type of the received PDP PDU. According to a

result of confirmation, the mobile terminal can maintain or release the set call. That is, the mobile terminal can use a packet radio service in a passive manner. Thereafter, if PDP PDUs of the same type as the above-described PDP PDU is continuously received, the mobile terminal should repeatedly perform a call release procedure, and thus it may not receive a packet radio service of a desired type. The continuous receipt of the PDP PDUs of such a non-desired type may simultaneously occur in all the mobile terminals of the GPRS network, or may be intentionally produced by an ill-intentioned Internet user.

Accordingly, the said conventional mobile communication system has the following problems.

First, the mobile terminal may continuously receive PDP PDUs of a non-desired type, and this causes the GGSN to repeatedly inquire of the HLR about subscriber information and location information in order to provide the PDP PDUs to the corresponding mobile terminals, thereby producing a great load.

Second, a call release procedure according to the PDP PDUs of a non-desired type is repeatedly performed, and this causes waste of wire/radio resources.

Third, the mobile terminal cannot actively use a packet radio service.

Fourth, the degree of occupation of a specified mobile terminal or terminal group becomes high by an ill-intentioned Internet user, and this causes the performance of the whole system to deteriorate.

[TECHNICAL SOLUTION OF THE INVNETION]

The present invention is invented to obviate problems of the conventional art. An object of the present invention is to provide a method for setting a packet terminating call in a GPRS network, and a packet terminating call filtering apparatus and system therefor.

Another object of the present invention is to provide a method for setting a packet terminating call in a GPRS network, which enables an active use of a packet radio service, and a packet terminating call filtering apparatus and system therefor.

Another object of the present invention is to provide a method for setting a packet terminating call in a GPRS network, which improves the use efficiency of wire/radio resources, and a packet terminating call filtering apparatus and system therefor.

Another object of the present invention is to provide a method for setting a packet terminating call in a GPRS network, which prevents performance degradation of the system caused by an ill-intentioned Internet user, and a

packet terminating call filtering apparatus and system therefor.

To achieve these objects and other advantages and in accordance with the purpose of the invention, a method of setting a packet terminating call in a mobile communication system includes the steps of determining whether to accept a packet terminating call set request for a packet radio service based on the pre-registered packet terminating call filtering information, and setting the terminating call according to a result of determination. The packet terminating call filtering information excludes or permits at least one specific node that provides a protocol data unit for a packet radio service. The packet terminating call filtering information includes at least one of information on whether to activate use of a packet terminating call filtering function, information indicating whether the packet terminating call filtering function excludes or permits said at least one specific node, and information for designating a packet pattern of a header of the protocol data unit. The information for designating a packet pattern includes at least one of a source Internet Protocol (IP) of the protocol data unit, a protocol identifier of the protocol data unit, and destination port numbers of the protocol data unit.

In another aspect of the present invention, a packet terminating call filtering information format comprises, for filtering a packet terminating call, at least one of a first field including information on whether to activate use of a packet terminating call filtering function, a second field including information indicating whether the packet terminating call filtering function excludes or permits said at least one specific node, and a third field including information for designating a packet pattern of a header of the protocol data unit based on the packet terminating call. The third field includes at least one of a source IP field of the protocol data unit, a protocol identifier field of the protocol data unit, and destination port number fields of the protocol data unit. The filtering information format further comprises an IP address and an International Mobile Subscriber Identity (IMSI).

In another aspect of the present invention, a method for registering the packet terminating call filtering information comprises the steps of receiving a packet terminating call filtering information message for a packet radio service from a mobile terminal, and registering the packet terminating call filtering information for a packet radio service based on the received message. The packet terminating call filtering information excludes or permits

at least one specific node that provides a protocol data unit for a packet radio service. Preferably, the method for registering the packet terminating call filtering information may further comprise the steps of receiving a inquiry and/or update message of the registered packet terminating call filtering information from the mobile terminal, inquiring and/or updating the registered packet terminating call filtering information based on the inquiry and/or update message, and transferring a result of inquiry and/or update to the mobile terminal.

In another aspect of the present invention, a method for registering the packet terminating call filtering information comprises the steps of authenticating a subscriber connected through the Internet, receiving a packet terminating call filtering information message for a packet radio service from the authenticated subscriber, and registering packet terminating call filtering information for a packet radio service based on the received packet terminating call filtering information message. The packet terminating call filtering information excludes or permits at least one specific node that provides a protocol data unit for a packet radio service. The method for registering the packet terminating call filtering information may further comprise the steps of receiving a inquiry and/or update message of the registered packet

terminating call filtering information from the authenticated subscriber, inquiring and/or updating the registered packet terminating call filtering information based on the inquiry and/or update message, and transferring a result of inquiry and/or update to the authenticated subscriber.

In another aspect of the present invention, a system for a packet radio service comprises a database for storing routing information and filtering information of a protocol data unit for a packet radio service, a terminating call control section for controlling a terminating call setting for the protocol data unit based on the routing information and the filtering information, a message processing section for performing an inquiry and/or update of the filtering information based on an inquiry message and/or update message of the filtering information, and an Internet protocol processing section for processing the protocol data unit and performing the terminating call setting procedure under the control of the terminating call control section. The filtering information excludes or permits at least one specific node that provides the protocol data unit. The system for a packet radio service further includes an agent for providing the inquiry message and/or update message of the filtering information from an Internet subscriber and/or a mobile terminal to the message

processing section, and an Internet host, connected between the agent and the Internet, for enabling the Internet subscriber and/or mobile terminal to connect to the agent.

[SYSTEM AND OPERATION OF THE INVENTION]

Reference will now be made in detail to the preferred embodiments of the present invention, examples of which are illustrated in the accompanying drawings.

FIG. 2 is a block diagram illustrating a structure of GGSN for filtering a terminating call according to an embodiment of the present invention.

Referring to FIG. 2, the GGSN 20 includes a database 17, a static information management section 16, an input/output and IP processing section 13, a message processing section 15, and a terminating call control section 14. The database 17 stores routing information, used for offering a PDP PDU transmitted from the Internet to the correspondent destination, and terminating call filtering information (i.e., information for filtering a terminating call) set through mobile terminals or the Internet. The static information management section 16 manages information stored in the database 17. The input/output and IP processing section 13 receives a PDP PDU, an inquiry message for packet terminating call filtering information, and an update message for the packet terminating call filtering information from the Internet,

informs the terminating call control section 14 that the
PDP PDU is received, and informs the message processing
section 15 that the packet terminating call filtering
information inquiry message or the packet terminating call
filtering information update message is received. The
Input/Output and IP processing section 13 also transfers a
result of inquiring the packet terminating call filtering
information and/or a result of judging whether to update
the packet terminating call filtering information
transferred from the message processing section 15 to a
corresponding mobile terminal or an Internet subscriber,
performs a procedure of setting a terminating call to the
corresponding terminal for the PDP PDU according to a
control signal transferred from the terminating call
control section 14, and transmits the PDP PDU encoded
according to a GPRS tunneling protocol – user (GTP-U)
method based on the set call to a corresponding destination.
The message processing section 15 inquires or updates the
packet terminating call filtering information stored in the
database 17 through the static information management
section 16 based on the contents of the filtering
information inquiry message and the filtering information
update message provided from the Input/Output and IP
processing section 13, generates and transfers to the
Input/Output and IP processing section 13 the result of

inquiring the packet terminating call filtering information
or the result of judging whether to update the packet
terminating call filtering information. The terminating
call control section 14 recognizes a packet terminating
call setting request for the PDP PDU by the Input/Output
and IP processing section 13, analyses a header of the PDP
PDU, judges whether the IP address of the PDP PDU is in an
IP address range in which a terminating service for a
packet radio service can be provided, and then judges in
addition whether there is static information on the PDP
address of the PDP PDU. The terminating call control
section 14 generates the control signal based on results of
judgment and the packet terminating call filtering
information in the static information and transfers the
generated control signal to the Input/Output and IP
processing section 13.

The static information includes an IP address field,
an IMSI field, and a packet terminating call filtering
information field. The packet terminating call filtering
information field includes a first field that indicates
whether to activate the use of the packet terminating call
filtering function, a second field that indicates whether
the corresponding packet pattern information recorded in
the packet terminating call filtering information field
refers to a rejection condition or a permission condition

if the packet terminating call filtering function is activated, and a third field used for designating a packet pattern of an IP header and a Transmission Control Protocol (TCP)/User Datagram Protocol (UDP) header of the PDP PDU.

The third field may be set to permit or reject setting of a packet terminating call for the packet pattern designation composed of a specific source IP, a protocol identifier, and a destination port number. Table 1 shows a case of setting the static information to accept only a packet terminating call set request for the specific source IP, the protocol identifier, and the destination port number.

IP Address Field	IMSI Field	Packet Destination Call Filtering Inf. Field
150.150.1.1	450000134550001	Permission Condition -Source IP: 150.150.1.0/24 -Protocol Identifier: TCP -Destination Port No.: 8080

A filtering information field included in the static information may be set to permit or reject connection of a terminating call by every possible combination of a source address and subnet mask attribute, protocol number (e.g., IPv4) / next header (e.g., IPv6) attribute, destination port range attribute, source port range attribute, IPSec security parameter index (SPI) attribute, type of service (TOS) (e.g., IPv4) / traffic class (e.g., IPv6) and mask attribute, and flow label (e.g., IPv6) attribute. The source address and subnet mask attribute includes an IPv4

address and an IPv6 address with subnet mask. For instance, the source address and subnet mask attribute for distinguishing packets transferred from all the hosts in an IPv4 domain A.B.CO/24 becomes {A.B.C.0[255.255.255.0]}. The protocol number (e.g., IPv4) / next header (e.g., IPv6) attribute includes an IPv4 protocol number or an IPv6 next header value. A scope of the value is from 0 to 255. The destination port range attribute and the source port range attribute includes respectively a port number or a range of port numbers, and the scope is from 0 to 65,535. The IPSec SPI includes a 32bit-long SPI. The TOS (e.g., IPv4) / traffic class (e.g., IPv6) and the mask attribute includes an IPv4 TOS octet or an IPv6 traffic class octet with a 8bit-long mask used for matching. The flow label attribute (e.g., IPv6) includes a 20bit-long IPv6 flow level.

FIG. 3 is a flowchart illustrating a packet terminating call control process in the GGSN according to the present invention.

Referring to FIG. 3, the internet requests a terminating call connection to GGSN if a PDP PDU is received to the Internet (S20). The GGSN judges whether a PDP context for a PDP address exists in the received PDP PDU (S21). A session means a logical connection for communications, and the SGSN and GGSN have a plurality of PDP contexts for one session when a session is set between

a mobile terminal and a GPRS network. If the transmission of PDP PDUs is requested from a mobile terminal or a network, the SGSN and GGSN transmit the PDP PDUs of the corresponding session to the corresponding destination based on the contents of the PDP contexts.

If the corresponding PDP context exists, the GGSN encodes the received PDP PDUs according to the GPRS Turneling Protocol-User (GTP-U) method, and then transfers the encoded PDP PDU to the corresponding SGSN that is providing the present service to the destination mobile terminal (S32). However, if the corresponding PDP context does not exist, the GGSN judges whether the static IP range of the PDP PDU is within an IP range in which the terminating service of the packet radio service can be provided (S22). If the static IP range is within an IP range in which the terminating service of the packet radio service can be provided, the GGSN judges whether the static information for the PDP address of the destination of the PDP PDU exists (S23). If the static information exists, the GGSN judges whether to accept or reject the terminating call connection request for the PDP PDU based on packet terminating call filtering information included in the static information (S25). If the packet terminating call connection request is accepted, the GGSN and SGSN perform the general packet terminating call connection process to

the corresponding destination (S26). The GGSN inquires of the HLR about the location information of the destination mobile terminal, obtains the address of the SGSN to which the destination mobile terminal belongs in response to the inquiry, and requests the connection of the terminating call to the SGSN of the obtained address. The SGSN requests the activation of the PDP context to the destination mobile terminal, and the terminating call connection is completed when the PDP context activation procedure is terminated. Based on the connected terminating call, the GGSN transfers the PDP PDU to the destination mobile terminal. However, if the packet terminating call connection request is not accepted, the GGSN reports the Internet that an error occurs in performing the packet terminating call connection (S27). If the static IP range of the PDP PDU is not the IP range in which the terminating service of the packet radio service can be provided, or if there is no static information of the PDP address for the corresponding destination of the PDP PDU, the GGSN transfers the PDP PDU to the corresponding destination according to the general routing method. (S28)

Meanwhile, if an update and/or inquiry message of the static information is received from the subscriber mobile terminal or the Internet (S29), the GGSN performs the

inquiring and/or updating of the static information according to the contents of the received message, and transmits results of the inquiry and/or update to the corresponding mobile terminal or the Internet subscriber (S31).

FIG. 4 is a flowchart illustrating a process in a terminating call control section according to the present invention.

As referred to FIG. 4, if it is judged that there is the static information for the mobile terminal corresponding to the destination of the PDP PDU, the terminating call control section inquires about the static information (S40).

If the packet terminating call filtering function for the packet terminating call connection to the corresponding mobile terminal is activated as a result of inquiry (S41), and if set information of the activated terminating call filtering information field refers to a rejection filter, the control section checks whether the set information matches the correspondent destination information of the PDP PDU, and if so, the terminating call control section transfers a first control signal indicating that the terminating call connection is impossible to the Input/Output and IP processing section 13. The Input/Output and IP processing section 13 informs the Internet that an

error occurs in the terminating call connection process for the PDP PDU (S44). If the set information does not match the correspondent destination information of the PDP PDU, the terminating call control section transfers a second control signal indicating that the terminating call connection request is accepted to the Input/Output and IP processing section 13. The Input/Output and IP processing section 13 performs the terminating call connection procedure to the mobile terminal corresponding to the destination of the PDP PDU, encodes the PDP PDU according to a GTP-U method, and transfers the encoded PDP PDU to the mobile terminal based on the connected terminating call.

If the packet terminating call filtering function for the packet terminating call connection to the corresponding mobile terminal is activated as a result of inquiry (S41), and if set information of the activated terminating call filtering information field refers to a permission filter, the control section checks whether the set information matches the correspondent destination information of the PDP PDU, and if so, the terminating call control section transfers a second control signal indicating that the terminating call connection is possible to the Input/Output and IP processing section 13. The Input/Output and IP processing section 13 performs the terminating call connection procedure to the mobile terminal corresponding

to the destination of the PDP PDU, encodes the PDP PDU according to a GTP-U method, and transfers the encoded PDP PDU to the mobile terminal based on the connected terminating call. If the set information does not match the correspondent destination information of the PDP PDU, the terminating call control section transfers a first control signal indicating that the terminating call connection request is rejected to the Input/Output and IP processing section 13. The Input/Output and IP processing section 13 informs the Internet that an error occurs in the terminating call connection process for the PDP PDU (S44).

FIG. 5 is a block diagram illustrating a construction and procedure for changing the packet terminating call filtering information according to an embodiment of the present invention.

Two methods for changing the packet terminating call filtering information will be explained below.

One is a method using a control plane of the GGSN, and the other is a method using the Internet service.

The first method defines a format of a control information message and a transmission procedure for sending/receiving a control message between the mobile terminal 10 and the GGSN 20 as shown as a path 'a'.

The second method is to connect an agent 25 having a web server function therewith to the Internet so that the

subscriber of the mobile terminal 10 connects to the
Internet as shown as paths ① and ②. The subscriber
connects to the agent 25 through an Internet host 26. Also,
the mobile terminal 10, like the Internet host, directly
connects to the agent 25 through the path 'b', and requests
the inquiry and/or update of the packet terminating call
filtering information to the agent 25. The agent 25
performs the authentication of the mobile terminal or
subscriber that has requested the inquiry and/or update of
the packet terminating call filtering information, and if
it is a valid subscriber or mobile terminal, it transfers
the inquiry and/or update of the packet terminating call
filtering information to the GGSN 20. Then, the message
processing section 15 of the GGSN 20 inquires or updates
the packet terminating call filtering information in the
static information stored in the database via the static
information management section 16, and informs the agent 25
of the results of the inquiry and update of the filtering
information. Accordingly, the agent 25 informs the
subscriber and mobile terminal of the results of the
inquiry and update.

The reason why the agent 25 is additionally employed
is to solve security problems that may occur when the GGSN
20 is directly exposed to the ill-intentioned Internet user.
By this agent 25, only the subscriber who has passed the

authentication procedure can inquire or update his/her own terminating call filtering information using the Internet. Also, in case of the service expansion, the agent 25 can be used.

[EFFECT OF THE INVENTION]

As described above, the present invention enables subscribers to use the packet radio network service actively through a terminating call filtering procedure. And, the present invention prevents degradation of system performance since PCP PDUs transferred by the ill-intentioned Internet user are early intercepted, and reduces waste of wire/radio resources caused by unnecessary terminating call connection since unwanted PDP PDUs are sorted before terminating call connection for the corresponding PDP PDUs.

It will be apparent to those skilled in the art than various modifications and variations can be made in the present invention without departing from the scope and spirit of the present invention.

Thus, it is intended that the present invention is not limited to descriptions of embodiments but the appended claims and their equivalents.

What is claimed is:

1. A method for setting a packet terminating call in a General Packet Radio Service (hereinafter referred to as GPRS) network, comprising the steps of:

determining whether to accept a packet terminating call set request for GPRS based on packet terminating call filtering information including at least one of information on whether to activate use of a packet terminating call filtering function, information indicating whether the packet terminating call filtering function excludes or permits said at least one specific node, and information for designating a packet pattern of a header of the Protocol Data Unit(hereinafter referred to as PDU); and

setting the terminating call according to a result of determination.

2. A method of claim 1, wherein the information for designating a packet pattern includes at least one of a source Internet Protocol (IP) of the PDU, a protocol identifier of the PDU, and a destination port number of the PDU.

3. A method of claim 1, wherein the packet terminating call filtering information further includes an

IP address or an International Mobile Subscriber Identity (IMSI).

4. A method for registering packet terminating call filtering information, comprising the steps of:

receiving a packet terminating call filtering information message for GPRS from a mobile terminal;

registering the packet terminating call filtering information for GPRS based on the received message;

receiving a inquiry and/or update message of the registered packet terminating call filtering information from the mobile terminal;

inquiring and/or updating the registered packet terminating call filtering information based on the inquiry and/or update message; and

transferring a result of inquiry and/or update to the mobile terminal.

5. A method for registering packet terminating call filtering information, comprising the steps of:

authenticating a subscriber connected through the Internet;

receiving a packet terminating call filtering information message for GPRS from the authenticated subscriber;

registering packet terminating call filtering information for GPRS based on the received packet terminating call filtering information message;

receiving a inquiry and/or update message of the registered packet terminating call filtering information from the authenticated subscriber;

inquiring and/or updating the registered packet terminating call filtering information based on the inquiry and/or update message; and

transferring a result of inquiry and/or update to the authenticated subscriber.

6. A method of claim 4 or claim 5, wherein the packet terminating call filtering information includes at least one of information on whether to activate use of a packet terminating call filtering function, information indicating whether the packet terminating call filtering function excludes or permits said at least one specific node, and information for designating a packet pattern of the PDU.

7. A system for setting a packet terminating call in a General Packet Radio Service (hereinafter referred to as GPRS) network, comprising:

a database for storing routing information and filtering information of a PDU for GPRS;

a terminating call control section for controlling a terminating call setting for the PDU based on the routing information and the filtering information;

a message processing section for performing an inquiry and/or update of the filtering information based on an inquiry message and/or update message of the filtering information; and

an Internet protocol processing section for processing the PDU and performing the terminating call setting procedure under the control of the terminating call control section.

8. A system of claim 7, wherein the filtering information includes at least one of information on whether to activate use of a packet terminating call filtering function, information indicating whether the packet terminating call filtering function excludes or permits said at least one specific node, and information for designating a packet pattern of the PDU.

9. A system of claim 7, further comprising:

an agent for providing the inquiry message and/or update message of the filtering information from an Internet subscriber and/or a mobile terminal to the message processing section; and

an Internet host, connected between the agent and the Internet, for enabling the Internet subscriber and/or mobile terminal to connect to the agent.

10, 11, 12, 13, 14, 15, and 16 : cancelled

도 1 FIG. 1

이동단말기: mobile terminal

기지국: base station

기지국 제어기: base station controller

인터넷: Internet

도 2 FIG. 2

이동단말기: mobile terminal

데이터베이스: database

고정정보관리부: static information management section

메시지처리부: message processing section

착신호제어부: terminating call control section

I/O 및 IP 처리부: Input/Output and IP processing section

인터넷: Internet

도 3 FIG. 3

시작: start

PDP PDU 도착: Receive PDP PDU

PDP context 존재?: PDP context exist?

예: Yes

아니오: No

고정 IP 범위?: static IP range?

고정 정보 존재?: static information exists?

착신호 필터링 기능 수행: perform terminating call filtering function

허가/불가? : permisstion/non-permission?

착신호 연결 절차 수행 : perform terminating call connection procedure

에러 발생 통보: report error occurence

일반 라우팅: general routing

고정 정보 갱신/조회 메시지 수신: receive static information update/inquiry message

고정 정보 갱신/조회 기능 수행: perform static information update/inquiry function

고정 정보 갱신/조회 결과 전송: transmit static information update/inquiry result

GTP-U 코딩 후 SSGN 으로 전달: transmit to SSGN after GTP-U encoding

종료: end

도 4 FIG. 4

시작: Start

고정 정보 조회: inquire of static information

필터링 요구?: require filtering function?

거절 필터?: rejection filter?

필터 매칭?: filter matched?

허가: permission

불가: non-permission

종료: end

도 5 FIG. 5

이동단말기: mobile terminal

기지국: base station

기지국 제어기: base station controller

인터넷: Internet

에이전트: Agent

인터넷 호스트: Internet host